<u>CLAIMS</u>

What is claimed is:

1   1. A method comprising:

2   establishing an audio-based dialog between a person and a machine,

3   wherein the person uses a communication device to communicate with the

4   machine;

5   automatically detecting a characteristic during the dialog in real time,

6   wherein the characteristic is not uniquely indicative of any of: the identity of the

7   person, the identity of the communication device, or any user account; and

8   customizing the dialog at an application level, based on the detected

9   characteristic.

1   2. A method as recited in claim 1, wherein the characteristic is a characteristic of

2   the person.

1   3. A method as recited in claim 2, wherein the characteristic is an approximate

2   age of the person.

1   4. A method as recited in claim 2, wherein the characteristic is the gender of the

2   person.

1   5. A method as recited in claim 1, wherein the characteristic is a type of speech

2   being spoken by the person.

1 6. A method as recited in claim 1, wherein the characteristic is an emotional state

2 of the person.

1 7. A method as recited in claim 1, wherein the characteristic is indicative of the

2 truthfulness of speech of the person.

1 8. A method as recited in claim 1, wherein the characteristic is an acoustic

2 characteristic.

1 9. A method as recited in claim 1, wherein the characteristic is indicative of a

2 speech level of the dialog.

1 10. A method as recited in claim 1, wherein the characteristic is indicative of a

2 noise level.

1 11. A method as recited in claim 10, wherein the characteristic is indicative of an

2 acoustic noise level of the dialog.

1 12. A method as recited in claim 10, wherein the characteristic is indicative of a

2 signal noise level of the dialog.

1 13. A method as recited in claim 1, wherein the characteristic is descriptive of an

2 environment in which the person is located.

1   14. A method as recited in claim 13, wherein the characteristic is an acoustic

2   characteristic.

1   15. A method as recited in claim 14, wherein the characteristic is a noise level of

2   an acoustic environment in which the person is located.

1   16. A method as recited in claim 13, wherein the characteristic is a noise type of

2   the acoustic environment.

1   17. A method as recited in claim 13, wherein the characteristic is the level of

2   reverberance of the acoustic environment.

1   18. A method as recited in claim 1, wherein the characteristic is descriptive of a

2   reason the person is experiencing an error.

1   19. A method as recited in claim 1, wherein the characteristic is a type of

2   communication device the person is using to communicate with the machine.

1   20. A method as recited in claim 1, wherein the method is implemented in a call

2   routing system, and wherein said customizing the dialog at an application level

3   comprises selecting a destination to which a call from the person should be

4   routed, based on the detected characteristic.

1   21. A method as recited in claim 1, wherein said customizing the dialog at an

2   application level comprises customizing an error recovery dialog based on the

3   detected characteristic.

1   22. A method as recited in claim 1, wherein said customizing the dialog at an

2   application level comprises communicating content customized for the person

3   based on the detected characteristic.

1   23. A method as recited in claim 22, wherein the content comprises an

2   advertisement customized for the person.

1   24. A method as recited in claim 1, wherein said customizing the dialog at an

2   application level comprises customizing a call flow of the dialog for the person.

1   25. A method as recited in claim 1, wherein said customizing the dialog at an

2   application level comprises customizing a prompt delivery of the dialog for the

3   person.

1   26. A method as recited in claim 1, wherein said customizing the dialog at an

2   application level comprises customizing a prompt style of the dialog for the

3   person.

1   27. A method as recited in claim 1, wherein said customizing the dialog at an

2   application level comprises customizing a set of grammars for the dialog for the

3   person.

1   28. A method as recited in claim 1, wherein said customizing the dialog at an

2   application level comprises customizing a persona of the machine for the person.

1   29. A system comprising:

2   a front end to generate a set of features in response to speech from a

3   person during a dialog with the person, wherein the person uses a

4   communication device to carry out the dialog;

5   a set of models;

6   a speech recognition engine to recognize the speech from the person based

7   on the features and the models;

8   a characteristic detector to detect a characteristic other than the identity of

9   the person, the identity of the specific communication device, or any user

10   account; and

11   a customization unit to customize the dialog at an application level based

12   on the detected characteristic.

1   30. An apparatus comprising:

2   means for establishing an audio-based dialog between a person and a

3   machine wherein the person uses a communication device to communicate with

4   the machine;

5   means for automatically detecting a characteristic during the dialog in real

6   time, wherein the characteristic is not uniquely indicative of any of: the identity

7   of the person, the identity of the specific communication device, or any user

8   account; and

9   means for customizing the dialog at an application level, based on the

10   detected characteristic.

1   31. A method comprising:

2   examining each of a plurality of audio-based dialogs, each dialog between

3   a person and a machine, to automatically detect a characteristic for at least some

4   of the dialogs, wherein each person uses a communication device to

5   communicate with the machine during the corresponding dialog, and wherein

6   the characteristic is not uniquely indicative of any of: the identity of the person,

7   the identity of the communication device, or any user account; and

8   generating an overall characterization of the dialogs with respect to the

9   characteristic.

1   32. A method as recited in claim 31, wherein the overall characterization of the

2   dialogs is a demographic analysis of the dialogs.

1   33. A method as recited in claim 31, wherein the characteristic is a characteristic

2   of the person.

1   34. A method as recited in claim 33, wherein the characteristic is an approximate

2   age of the person.

1 35. A method as recited in claim 33, wherein the characteristic is the gender of

2 the person.

1 36. A method as recited in claim 31, wherein the characteristic is a type of speech

2 being spoken by the person.

1 37. A method as recited in claim 31, wherein the characteristic is an emotional

2 state of the person.

1 38. A method as recited in claim 31, wherein the characteristic is indicative of the

2 truthfulness of speech of the person.

1 39. A method as recited in claim 31, wherein the characteristic is an acoustic

2 characteristic.

1 40. A method as recited in claim 31, wherein the characteristic is indicative of a

2 speech level of the dialog.

1 41. A method as recited in claim 31, wherein the characteristic is indicative of a

2 noise level.

1 42. A method as recited in claim 41, wherein the characteristic is indicative of an

2 acoustic noise level.

1   43. A method as recited in claim 41, wherein the characteristic is indicative of a

2   signal noise level.

1   44. A method as recited in claim 31, wherein the characteristic is descriptive of

2   an environment in which the person is located.

1   45. A method as recited in claim 44, wherein the characteristic is an acoustic

2   characteristic.

1   46. A method as recited in claim 45, wherein the characteristic is a noise level of

2   an acoustic environment in which the person is located.

1   47. A method as recited in claim 44, wherein the characteristic is a noise type of

2   the acoustic environment.

1   48. A method as recited in claim 44, wherein the characteristic is the level of

2   reverberance of the acoustic environment.

1   49. A method as recited in claim 31, wherein the characteristic is descriptive of a

2   reason the caller is experiencing an error.

1   50. A method as recited in claim 31, wherein the characteristic is a type of

2   communication device the person is using to communicate with the machine.

1   51. A method as recited in claim 31, wherein the method is implemented in a call

2   routing system, and wherein said customizing the dialog at an application level

3   comprises routing a call from the person based on the detected characteristic.

1   52. A method as recited in claim 31, wherein said customizing the dialog at an

2   application level comprises customizing an error recovery dialog based on the

3   detected characteristic.

1   53. A method as recited in claim 31, wherein said customizing the dialog at an

2   application level comprises communicating content customized for the person

3   based on the detected characteristic.

1   54. A method as recited in claim 52, wherein the content comprises an

2   advertisement customized for the person.

1   55. A method as recited in claim 31, wherein said customizing the dialog at an

2   application level comprises customizing a call flow of the dialog for the person.

1   56. A method as recited in claim 31, wherein said customizing the dialog at an

2   application level comprises customizing a prompt delivery of the dialog for the

3   person.

1   57. A method as recited in claim 31, wherein said customizing the dialog at an

2   application level comprises customizing a prompt style of the dialog for the

3   person.

1   58. A method as recited in claim 31, wherein said customizing the dialog at an

2   application level comprises customizing a set of grammars for the dialog for the

3   person.

1   59. A method as recited in claim 31, wherein said customizing the dialog at an

2   application level comprises customizing a persona of the machine for the person.

1   60. An apparatus comprising:

2   means for providing a plurality of audio-based dialogs, each between a

3   person and a machine, wherein each person uses a communication device to

4   communicate with the machine during the corresponding dialog;

5   means for examining each of the dialogs to automatically detect a

6   characteristic for at least some of the dialogs, wherein the characteristic is not

7   uniquely indicative of any of: the identity of the person, the identity of the

8   specific communication device, or any user account; and

9   means for generating an overall characterization of the dialogs with

10   respect to the characteristic.